

REMARKS

Claims 1-14 and 18-23 now stand in the application, new claims 18-23 having been added. Reconsideration of the application and allowance of all claims are respectfully requested in view of the above amendments and the following remarks.

Applicants filed an RCE on January 9, 2006, and at that time submitted further arguments explaining the distinction of the claimed invention over the prior art. It appears from the comments of the examiner in the present action that the examiner has not understood the invention as claimed or the prior art or the relationship between them. Applicants attempt below to explain these.

As described in the Background discussion of the present application, a base station may communicate with the various mobile units within its cellular coverage area using TDMA. In addition to the data bursts that are transmitted in the uplink direction, each mobile will transmit to the base station signaling information relating to communications already established and to communications the mobile may wish to establish. For this purpose, within the TDMA frame, there are one or more time slots that have to be shared by all of the mobile units for their signaling information. The most common way of handling this is to assign each mobile station a usage time within the slot(s), but a mobile unit maintains its assigned usage time even if it does not have and signaling information to send, and on the other hand a station that has several messages to send may have to wait for successive assigned times even though other times are being essentially wasted by filler information.

So the solution presented by applicant is to have a mobile station use an assigned time when it needs to send signaling information, but then to give up its assigned time and let others use it. An important feature of the invention is the use of a virtual identity only for the duration of a message and thereafter releasing the virtual identity.

The Background discussion of Cheng mentions that it was well-known to dynamically adjust the number of traffic bearing channels according to traffic demands. The patentee recognizes that the availability of traffic bearing channels is not the only issue, but also the responsiveness of the signaling channel. Synchronization amongst the various stations is too difficult in a CATV system, so a polling technique was commonly used. But the polling technique is wasteful because it results in a lot of interaction with terminals not in need of servicing. So the solution provided by Cheng is dynamic allocation of both data and signaling channels. Cheng does this with a modified “polling” approach. The central station initiates pooling on the signaling channel to simultaneously solicit transmission from a plurality of remote stations, and then only if a contention occurs the central station will proceed with a selective polling.

If one compares the language of claim 1 of the present case to Cheng, there are several significant distinctions apparent. First, claim 1 describes the controller as increasing or decreasing the number of virtual identities depending on the level of occupancy of the signaling multiframe. This is not taught or suggested by Cheng. Cheng has a set of signaling channels RD-1, rD-2, ...RD-n, but these are not virtual identities. Each of these signaling channels is used by plural remote stations on a multiple access basis. See, e.g., lines 41-43 of column 7. Using arbitrary numbers simply for purposes of explanation, there might be 400 remote stations all

periodically requiring signaling channel bandwidth. There might be 8 signaling channels. Fifty remote stations could be assigned to each signaling channel, and they all share the signaling channel to which they are assigned. If Cheng detects that the load on the signaling channels is too high, it might allocate a ninth and tenth signaling channel, and then there would be only forty remote stations assigned to each signaling channel. But what is important to note is that the channels Rd-1, RD-2, etc., are not virtual identities. They are simply multiple shared channels. These are the “time slots reserved for signaling” discussed at the bottom of page 1 and top of page 2 of the specification, and they must be shared amongst the many stations.

The paragraph bridging pages 1 and 2 of the present application describes the remote units as sharing these time slots in an inflexible manner depending on the identity of each station. The solution provided by the present invention is to use virtual identities instead of actual identities to share the signaling channels. Cheng does not discuss this concept at any time. The variation in the number of signaling channels in Cheng is modifying the channels which the virtual identities must share, but it is not modifying the number of virtual identities as that term is used in the present claims.

In the Advisory action mailed December 19, 2005, the examiner has equated the dynamic allocation of signaling channels with dynamic allocation of virtual identities, but this is clearly not the case. A “signaling channel” in Cheng is shared by multiple remote stations on a multiple access basis. The signaling channel is not a virtual identity. A virtual identity might be, e.g., user-1 out of N users who are permitted to use the signaling channel.

A further significant distinction over Cheng is that the language of claim 1 recites that any remote unit will use one of the virtual identities when sending a message but then releases

the virtual identity. Cheng has the remote stations responding to polling to transmit signaling information, so a remote station will use its assigned channel, e.g., RD-1, but there are no virtual identities involved.

The examiner has secondarily relied on Barzegar, to teach the use of a channel when needed and thereafter releasing it, but Barzegar allocates signaling channels, not virtual identities that share a given channel.

Further, once a signaling channel is assigned to a remote terminal in Cheng, the signaling channel remains assigned to that terminal. There is no place in Cheng where the patentee describes having a remote station still attached to the network and not assigned to a signaling channel. The examiner himself pointed out that in Cheng if there is no signaling channel available then the remote station is disabled. The present applicant may have mixed the use of “authorize” and “assign”, but the important point is that there is no point at which assignment of a signaling channel is “taken away” from a remote terminal in Cheng.

Again, and at the risk of over-repetition, the terminals in Cheng are assigned to signaling channels with multiple stations assigned to each signaling channel and then all stations assigned to a given signaling channel will share that signaling channel. The channel itself is not an identity and does not correspond to a single terminal so cannot be a virtual identity. It is a shared channel.

New claims 18-23 have been added in an attempt to emphasize the relationship between virtual identities and remote units, which is different from the channels in Cheng or Bazegar.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

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Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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CUSTOMER NUMBER

/DJCushing/
David J. Cushing
Registration No. 28,703

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